

The Catch



NOLAN DOESKEN'S MONTHLY COCORAHS E-MAIL MESSAGE

CoCoRaHS -- A Flood of Anniversaries

Fort Collins, Colorado -- July 27th, 2016

Welcome and good day from Colorado,

How are you and your rain gauge(s) doing?

We've had a hot, dry summer so far in our part of Colorado. Thunderstorms pop up nearly every day, but they all seem to miss us. [Checking my CoCoRaHS Station Precipitation Summary Report](#), I see that in the last ten full weeks I've mustered exactly 1.00", but as I count up the days, it's rained at least 0.01" (we call that "measurable") on 23 days. 17 more days had a trace. In other words, it has tried to rain on 40 out of 70 days -- quite a lot. But it just hasn't amounted to much. We've not had a single day with 0.20" or greater, and only four days with 0.10 or more since the middle of May. Meanwhile, a couple counties east of us (albeit some of our Colorado counties are quite large) rainfall totals are as high as 10" for the same time period. But that's why we do CoCoRaHS, because "the rain does not fall the same on all".

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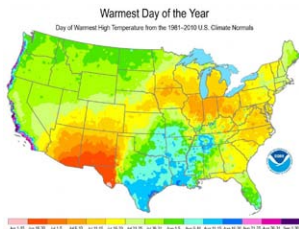
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Encouragement - Getting Started

We've added about 200 new volunteers this month and close to 2,500 have signed up to help us measure and report precipitation since January. But many of you "newbies" have not gotten started yet. How can we help? We really need you! Remember we have [volunteer leaders standing by in every state to help](#). And when in doubt, just send a message to info@cocorahs.org and our staff here will get back with you. Start measuring and reporting tomorrow!

Hot Temperatures - When is Your Warmest Day of the Year?



Speaking of summer heat, here's a neat map that was shared recently (Click on the image to open). If you don't think about it much, it's easy to think we all see the hottest weather of summer sometime in mid or late July -- about a month later than summer solstice. In fact, the highest temperatures of summer are greatly influenced by humidity and geographic factors. In the desert SW, the heat follows the sun -- occurring nearer the time of peak day length and highest sun angle. In more humid areas, it's delayed a bit. Then, when you move towards coastal areas, the lag is even more (since water warms much slower and holds heat much longer than air). In fact, check out coastal California where the hottest daily high temperatures often wait until late August or September. Anyway, this is a great product and gives us all something to think about.

Anniversaries

We all have anniversaries we celebrate or otherwise. We may have wedding anniversaries (one of our volunteers just wrote to retire from CoCoRaHS after his wife of 71 years just passed away), or job anniversaries (I'm coming up on 39 years on the job here at Colorado State University). But in our business of weather and climate, we also acknowledge the anniversary dates of important, memorable, and in some cases tragic weather events.

Our calendar here in Colorado gets very busy this time of year. Tomorrow (July 28th) is the 19th anniversary of the Fort Collins flood -- the extreme localized storm (over 14" of rain at the core) that was the triggering event to start CoCoRaHS.

- On Saturday, July 30th, some of us will remember the 37th anniversary of a remarkable hail storm here that clobbered cars and roofs and left craters in local golf courses and disrupted training camp for the Denver Broncos -- but most importantly injured several people and killed an infant in her mother's arms while running for cover.
- On Friday I'll participate in a press conference at the mouth of the Big Thompson Canyon where 40 years ago (July 31, 1976) a tumultuous flash flood killed over 140 campers, vacationers and locals who were preparing for the grand celebration of Colorado's statehood centennial on Aug 1 (That's why we're called the Centennial State). There were at least two other 100+ fatality floods in the 1970s (PA and SD) and this forced important progress in flood forecasting, warning and response.

On Monday (Aug 1) just across the border into SE Wyoming, Cheyenne will be remembering the 31st anniversary of their flood and hail storm that killed over a dozen folks, sweeping away many cars or burying them under feet of hail. We'll never forget that night as we were just coming home from the hospital with our firstborn child and saw the giant thunderhead to the north. I recall telling my wife as we watched with astonishment the height of the cloud and the intensity of the lighting, "Well, at least it's out in the middle of nowhere". I totally misjudged distance as I thought it was over the windswept prairie and instead it was directly centered over the city of Cheyenne.

Anniversaries help us remember -- both good times and bad. I'm sure you have your own stories and family memories. Any of us who are teenagers or older, have probably lived through something dramatic already. But one reason for remembering is to help learn from past mistakes. I learned in 1997 that my leaky rain gauge and failure to call the National Weather Service during the storm was a serious mistake. My timely phone call might have saved lives. Some time, some place, you have been or will be in a similar situation.

You Moved!

You moved, you took your rain gauge, you changed your address, but your data point stayed behind?

Some of you have recently discovered that when you try to change your address in your CoCoRaHS station profile, you are blocked and get a message to contact us directly. Why? We had been noticing more and more odd data points on daily rainfall maps that we just couldn't explain. After some data quality control follow up, we discovered several cases where people had moved across town, across the state or even across the country. They updated their address using the "My Account" feature and then continued to use their old station ID to enter data. As a result, they thought that we had moved their station to its now location, but in fact the daily precipitation was still plotting at the old address. No wonder the rainfall maps look odd.

In fact, when you move you can keep your login and password and we can save your data from your previous location and archive it indefinitely. But, you will need to have us assign a new station name and number, even if you only move a few blocks. Just drop us a note at info@cocorahs.org and we'll get you set up.

Chances are there still may be a few relocations floating around that we haven't tracked down. If you think your data are not plotting in the right location on the CoCoRaHS maps, or if you need a new station name and number to accurately reflect your new location, please let us know!

Daphne Returns!

Daphne, with three young children at her heels, dropped by for a wonderful visit this week. Who is Daphne? Daphne was one of the three high school students back in 1998 who worked to create the original CoCoRaHS (then called the Colorado Collaborative Rain and Hail Study). If you've ever watched



our animation about how CoCoRaHS began, you'll see her featured as a cartoon superhero around the 2:30 mark of the 4:00 minute animation. Daphne drafted fliers and went to every school in Fort Collins and recruited at least one student or teacher willing to set up a rain gauge and start tracking precipitation. (A few of those earliest recruits are still involved in CoCoRaHS today!) She organized training events and public gatherings to spread the word. I particularly remember one quote from Daphne during a planning meeting as we were discussing ideas for future volunteer training sessions. Her words, "Well, we have to have food" were wiser than her years. We haven't always followed her suggestion but we certainly learned that good food helped make happy people, and happy people were more likely to volunteer to help. We've tried to remember that ever since. I wish we could have more picnics and potlucks all over the country. But it was so neat to see her again. Her kids (7, 4 and 2) are old enough now to get started in CoCoRaHS so they'll be setting up their gauge soon -- in rural northern Minnesota, no less. Thanks, Daphne, for your contributions to CoCoRaHS!

Hail and Wind - Does Your Gauge Catch All that Falls?

The answer is no. Wind-driven sideways rain may deflect around or splash out of our CoCoRaHS gauges. Hail may indeed bounce out, too. As a result during furiously intense storms with hail and sideways precipitation, we may not be catching and reporting all the rain that falls. Fortunately, we have a handful of curious and motivated "CoCoRaHsians" who have been conducting some tests. It's hard to know for sure what's the absolute truth, but one thing that helps is to have a second rain gauge without a funnel. With just the outer cylinder in place, hail or large rain drops won't bounce or splash out.

I'm happy to say that early comparison shows that we're missing some, but not too much. 5-10% loss due to splash and bounce-out is probably fairly typical, but if most precipitation from a particular storm falls as hail with hard round stones, chances are we could be under-reporting the true precipitation by at least 25%. And as for sideways, wind-whipped hurricane-style rain, the fact is "we just don't know" but we're surely missing some of the rain.

I've now got three rain gauges set up: One is closer to the house but the fast growing trees may interfere now if the wind is from the SW or NW. The second gauge is on a fence post farther away put in a more ideal location. The third gauge has the funnel and inner tube removed to avoid hail-bounce and splash-out (haven't had a problem with either, yet, but someday). It's interesting having more than one gauge. Most times they read the same or within 0.01". Sure enough, differences are larger when the storms are most furious.

Webinars - Climates of the U.S., by Region

We've already done the Midwest, the High Plains, the West



and the Southeast. You can view any of our past webinars anytime by visiting our [WxTalk Webinar page](#) or through our [YouTube Channel](#).

Next up is the [Northeast on Aug 4](#) followed by South Central US on September 29th and you can register for the August 4th webinar by clicking on the link above.

While these webinars are developed as educational resources for CoCoRaHS volunteers, they are free and available for any and all - so feel free to share this invitation with others you know who are interested.

Drought Impacts, Significant Weather, Hail, etc.

Just another reminder, if you experience any of these, we appreciate your timely reports and we share them immediately and automatically with the National Weather Service. You can find them all in the [left hand panel of your data entry page](#).

Farm Story - Skunked!

Since I've had my sore foot (recently diagnosed as a torn tendon -- which should heal if it's thoroughly braced and protected for a few months) and my wife is off her feet for a few weeks recovering from knee surgery, I've come to appreciate the amazing design and construction of our feet, knees and legs -- and how easy they are to take for granted. I've also come to understand just how many steps it takes around here to take care of the animals and keep everything weeded and watered (since it seems to have forgotten temporarily how to rain). So far, our horse pasture looks great (except for another onslaught of invasive noxious weeds that arrived in the irrigation water). For the first time in several weeks I've been able to get out and adjust our irrigation pipes and ditches. Playing in the water is still fun!

Going to the Humane Society to retrieve a runaway cat is less fun. We had recently accepted a new cat to replenish our diminished barn cat team. This handsome young cat had desperately needed a new home, and had seemingly been settling in well here. But somehow he wandered off (surprise surprise) and got turned in. Thanks to chip technology they traced him to us and called just before closing to tell us they had our cat. I was not amused, The Humane Society is on the far opposite side of town. I hightailed it across town and got there just in time to avoid extra charges. It was interesting to see, when they went to retrieve "Casey" from the cage, that our cat was the fiercest of all. We had heard rumors from the previous owner of this type of bad behavior, but so far, he had only been mellow and sweet with us. Alas, he was "Top Cat". It took three experienced animal people to capture the kitty and get him in his carrier for the ride back home. Sighhhh.

Then the next day -- one of the hottest days all summer -- we had our first black and white striped adventure in several years. We don't have air conditioning but we have a nice whole house fan that we turn on in the evening when it cools down outside. That night it took until 11 PM for the temperature to drop below 80F. I was finally able to turn

on the fan and within just a few seconds rather than pulling in fresh cool fragrant summer-evening air it sucked in and immediately filled the house with that sickening smell of "direct skunk in the face" (as opposed to the stinky but less sickening "squished skunk" or "nearby skunk" smell). The question of "who got sprayed?" was quickly answered as we immediately heard whimpering. I turned on the back yard light and saw our shaggy long-haired Australian shepherd trying to bury his face in the dirt -- a sure sign of a recent bad mistake. We headed for the closet and found, fortunately, we still had a couple bottles of hydrogen peroxide and a big bag of baking soda. An hour later, the dog could live with himself again and we were able to shower and limp to bed. Five days later, our "skunk dog" still stinks, and the house is not yet "fresh", but we're getting better.

Next up -- applesauce time as our huge ancient early soft apple tree is bent to the ground under the weight of a bumper crop. The trick is getting the apples before they squish on the ground. More steps required.

Thanks to all you CoCoRaHS rain gauge readers. Keep it up and enjoy the last half of summer! And keep an eye on the tropics. It's that time of year now.

Nolan Doesken and the CoCoRaHS team
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